

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte WOLFGANG BACHMANN, GERHARD KRUMP,  
HANS-JURGEN REGL and ANDREAS ZIGANKI

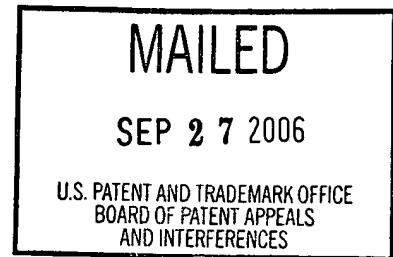
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Appeal No. 2006-2794  
Application No. 09/700,139

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ON BRIEF

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Before JERRY SMITH, RUGGIERO, and HOMERE, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-4, 6, 8, and 9. Claim 5 has been indicated to contain allowable subject matter [brief, page 2; reply brief, page 2].

The disclosed invention pertains to a loudspeaker comprising a sound radiating panel that is mounted under mechanical tension to a periphery (e.g., a wall) by a connecting element. The panel comprises a core layer and a cover layer connected thereto. The panel is formed such that the cover layer is under mechanical tension when it is connected with the core layer. Additionally, the connecting element is stretched so that it is under mechanical tension and then affixed to the periphery and the panel. Such a construction enhances low frequency resonances.

Representative claim 1 is reproduced as follows:

1. Panel loudspeaker comprising

at least one sound radiating panel having a core layer and at least one cover layer connected with the core layer,

a periphery that surrounds the at least one sound radiating panel with a lateral gap, and

at least one connecting element that connects the at least one sound radiating panel with the periphery,

wherein the at least one connecting element is under mechanical tension when connected with the periphery, and

wherein regions of the at least one cover layer that are connected with the core layer are also under mechanical tension.

The examiner relies on the following references:

Azima et al. (Azima '766)	6,003,766	Dec. 21, 1999
Azima et al. (Azima '029)	6,332,029	Dec. 18, 2001 (filed Sept. 3, 1996)

The following rejections are on appeal before us:

1. Claims 1, 3, 8, and 9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Azima '766.

2. Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Azima '766.

3. Claims 2 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Azima '766 in view of Azima '029.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

#### OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the disclosure of Azima '766 does not fully meet the invention as set forth in claims 1, 3, 8, and 9. We are also of the view that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 2, 4, and 6.

Accordingly, we reverse.

We consider first the rejection of claims 1, 3, 8, and 9 under 35 U.S.C. § 102(e) as being anticipated by Azima '766. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the briefs have not been considered and are deemed to be waived [see 37 CFR § 41.37(c)(1)(vii)(2004)].

The examiner has indicated how the claimed invention is deemed to be fully met by the disclosure of Azima '766 [answer, page 4]. Regarding independent claim 1, the examiner asserts in the rejection that the connecting element 3 of Azima '766 is under mechanical tension when connected with the periphery as claimed. The examiner further asserts that when joints 20 are under tension, cover layer 21 is also under tension [id.].

Appellants argue that the examiner's interpretation of mechanical "tension" is unreasonably broad [brief, page 4]. Rather, appellants argue that skilled artisans would understand that the term "tension" in the mechanical sense

means “forces acting to pull an object apart” as evidenced by various textbook and dictionary sources [brief, page 5].

The examiner responds citing a dictionary that defines “tension” as “either of two balancing forces causing or tending to cause extension” [answer, page 6]. With this construction, the examiner asserts that as the panel of Azima ‘766 vibrates, the panel inherently produces a force causing or tending to cause extension in at least a part of the skin, core, and suspension [answer, pages 6 and 7].

Appellants respond with two main arguments. First, appellants argue that the vibration of one body does not inherently place an attached second body under tension [reply brief, page 3]. In this regard, appellants note that the examiner’s inherency position is not supported by evidence or explanation apart from mere conclusory statements [reply brief, pages 3 and 4]. Second, appellants argue that claim 1 requires that the tension exist on assembly – even when the panel is not vibrating [*id.*]. Appellants emphasize that claim 1 expressly requires that the “at least one connecting element is under mechanical tension when connected with the periphery” [reply brief, page 5; emphasis in original]. According to appellants, it is not enough that the connecting element is placed under mechanical tension after assembly; connecting the loudspeaker must itself have resulted in that tension [reply brief, page 5].

We will not sustain the examiner's anticipation rejection of independent claim 1. At the outset, we agree with appellants that skilled artisans would understand "mechanical tension" to mean "forces acting to pull an object apart." Simply put, skilled artisans (electrical and mechanical engineers with related industry experience) would readily understand that mechanical tension is the opposite of compression. In our view, appellants' definition of the term more closely aligns with this understanding, particularly in light of appellants' disclosure.<sup>1</sup> We therefore adopt appellants' construction.<sup>2</sup>

With this construction, we recognize that although Azima '766 is silent regarding whether the connecting element 3 and regions of the cover layer 21 are under mechanical tension as the examiner readily admits, the reference may nonetheless anticipate the claims if such tension inherently results from the loudspeaker's structure and operation. Under the doctrine of inherency, if a claimed element is not expressly disclosed in a prior art reference, the reference nevertheless anticipates the claim if the missing element is necessarily present in

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<sup>1</sup> See e.g., appellants' specification, page 6, lines 11-16 (noting that tension in connecting elements 17 is achieved by stretching the elements prior to connecting them to wall 16). See also Fig. 3 (indicating tension in the connecting element and cover layers with double arrows).

<sup>2</sup> See *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997) ("[The USPTO] applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.").

the reference, and that it would be so recognized by skilled artisans. Rosco, Inc. v. Mirror Lite Co., 304 F.3d 1373, 1380, 64 USPQ2d 1676, 1680 (Fed. Cir. 2002) (citations and internal quotation marks omitted). To anticipate the claim, the missing element must be necessarily present in the prior art -- not merely probably or possibly present. Id. (emphasis added).

Turning to Azima '766, Figure 2a is illustrative. As the examiner indicates, suspension 3 connects the panel 2 with periphery 1 and thus reasonably corresponds to the claimed connecting element. The reference indicates that suspension 3 comprises resilient materials such as foam rubber and foam plastics [Azima '766, col. 3, lines 18-20]. Additionally, suspension 3 may damp the panel's edges to prevent excessive edge movement [id., col. 4, lines 25-26]. Significantly, however, Azima '766 is silent regarding the nature and extent of forces applied to the suspension during operation or otherwise -- let alone whether such forces cause the suspension to be under mechanical tension as claimed.

We agree with appellants that the examiner has simply offered no evidence on this record to establish that suspension 3 would necessarily be under mechanical tension. In short, the examiner's inherency assertions are merely speculative without concrete evidentiary support.

We recognize, however, that some movement will occur in Azima's panel loudspeaker by launching bending waves into the panel via the transducer 9 to cause it to acoustically resonate [see id., col. 2, lines 59-67]. But such

movement hardly guarantees that the resilient suspension or regions of the cover layer that are connected with the core layer will be under mechanical tension. In fact, it is equally likely on the record before us that at least the resilient suspension is under compression or some other force – not necessarily tension as the examiner speculates.<sup>3</sup> We cannot say that no evidence exists that would support the examiner's inherency position. We can say, however, that no such evidence exists on this record.

Because insufficient evidence exists on this record establishing that the connecting element 3 in Azima '766 is necessarily under mechanical tension, we will not sustain the examiner's anticipation rejection of independent claim 1. Since we do not sustain the examiner's rejection of independent claim 1, we likewise do not sustain the examiner's rejections of dependent claims 2-4, 6, 8, and 9.

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<sup>3</sup> See e.g., Fig. 4 of Azima '766 (showing the resilient suspension supporting the panel).



In summary, we have not sustained the examiner's rejection with respect to any of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1-4, 6, 8, and 9 is reversed.

REVERSED

*Jerry Smith*  
JERRY SMITH  
Administrative Patent Judge

*Joseph F. Ruggiero*  
JOSEPH F. RUGGIERO  
Administrative Patent Judge

Jean R. Homere  
JEAN R. HOMERE  
Administrative Patent Judge

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FOLEY HOAG LLP  
PATENT GROUP, WORLD TRADE CENTER WEST  
155 SEAPORT BLVD  
BOSTON, MA 02110